

AMENDMENTS TO THE CLAIMS

Listing of claims:

1. (Currently Amended) A method ~~for switching route~~, comprising the steps of:

~~setting a correspondence relationship between a port number of each destination port and a port number of a transmitting port of a network device, wherein, the port number of each transmitting port is the corresponding port number of the destination port;~~

~~modifying the number of the transmitting port into the number of a backup port in the set correspondence relationship and saving the modified relationship, wherein the transmitting port and backup port are both corresponding to a fault destination port, when there is a service failure in any destination port of the network device~~

receiving a data packet comprising a data packet identifier;

identifying a destination port corresponding to the data packet identifier from a first routing table, wherein there is a first relationship between the data packet identifier and the destination port in the first routing table; and

transmitting the data packet via a transmitting port corresponding to the destination port based on the saved correspondence relationship, by the network device a second relationship between the destination port and the transmitting port in a second routing table, after receiving a data packet wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port.

2. (Currently Amended) The method according to Claim 1, wherein transmitting the data packet via a transmitting port corresponding to the destination port based on a second relationship between the destination port and the transmitting port in a second routing table ~~the step of the network device transmitting the data packet based on the saved relationship~~ comprises:

~~after receiving the data packet, the network device finding out the port number of the destination port corresponding to an identifier value of the received data packet by searching an original routing table in the network device itself according to the identifier value of the received data packet;~~

~~the network device searching out the port number of the transmitting port corresponding to the found port number of the destination port according to the saved second relationship; and the network device transmitting the data packet via the transmitting destination port which is corresponding to the searched out port number of the transmitting port.~~

3. (Currently Amended) The method according to Claim 1, wherein the order of the second relationship is set ~~the step of setting the relationship~~ comprises: ~~setting successively the relationship of the network device according to the sequence of the port numbers of the destination port; and the step of the modifying comprising: the network device finding the port number of the transmitting port which is corresponding to the port number of the fault destination port according to the port number of the fault destination port; and modifying the port number of the transmitting port into the backup port number which is corresponding to the fault destination port.~~

4. - 6. (Canceled)

7. (Currently Amended) A network device, comprising:

a CPU processor;

a first routing unit; and

a second routing unit, ~~wherein,~~

wherein the CPU processor is configured to communicate with the first routing unit and the second routing unit,~~adapted to: monitor each destination port of a network device in real time, and when a service failure is found in any destination port of the network device, transmit the information of the service failure to the first routing unit, modify a port number of a transmitting port corresponding to a fault destination port into the port number of the backup port corresponding to the fault destination port in the correspondence relationship between the port number of each destination port and the port number of the transmitting port which is saved in the second routing unit;~~

wherein the first routing unit is configured to~~adapted to: save a first relationship between a data packet identifier and a destination port in a first routing table, identify the destination port corresponding to the data packet identifier from the first routing table after receiving a data packet,~~the existing routing table of the network device, receive the information of the service failure from the CPU, find out the port number of the destination port corresponding to the received data packet based on the self-stored routing table, and transmit the found port number of the destination port to the second routing unit; and

wherein the second routing unit is configured to~~adapted to: save the a second relationship between the port number of each destination port and the port number of the a transmitting port in a second table, the network device, when receiving the port number of the destination port sent from the first routing unit, search out the port number of the transmitting port corresponding to the~~

~~received port number of the destination port in the saved relationship between the port number of each destination port and the port number of the transmitting port, and transmit the data packet via the destination transmitting port indicated by the port number of the transmitting port searched out corresponding to the destination port based on the second relationship.~~

8. (Canceled)

9. (Currently Amended) The network device according to Claim 7, wherein ~~the first routing unit is further adapted to find out the corresponding port number of the destination port corresponding to the currently received data packet according to the self stored routing table in the prior art and transmit to the second routing unit the found port number of the destination port when every destination port of the network device runs well; and the second routing unit is further adapted~~ configured to search out the corresponding port number of the transmitting port corresponding to the port number of the destination port according to the second relationships ~~sent from the first routing unit in the currently saved relationship and transmit the data packet via the destination port indicated by the port number of the transmitting port searched out when each destination port of the network device runs well.~~

10. - 18. (Canceled)

19. (New) The method according to Claim 1, wherein the port number of the transmitting port is set to a port number of the destination port in the second table when the transmitting port is operating normally.

20. (New) The method according to Claim 19, wherein when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port.

21. (New) The method according to Claim 20, wherein each destination port appears only once in the second table.

22. (New) The method according to Claim 21, wherein the destination port appears a plurality of times in the first routing table.

23. (New) The method according to Claim 22, wherein the first routing table is not modified when there is a service failure in any destination port.

24. (New) The method according to Claim 23, wherein the data packet is not transmitted on the first transmitting port when a failure is occurs in the first transmitting port.

25. (New) The network device according to Claim 7, wherein the port number of the transmitting port is set to a port number of the destination port in the second table when the transmitting port is operating normally.

26. (New) The network device according to Claim 7, wherein when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port.

27. (New) The method according to Claim 7, wherein each destination port appears only once in the second table.

28. (New) The network device according to Claim 7, wherein the order of the second relationship is set according to the sequence of the port numbers of the destination port.

29. (New) The network device according to Claim 7, wherein the processor is configured to monitor each destination port in real time and modify the transmitting port corresponding to the fault destination port into a backup port of the fault destination port when a service failure is found in the destination port.

30. (New) The network device according to Claim 7, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port.

31. (New) The network device according to Claim 7, wherein the first routing table is not modified when there is a service failure in any destination port.

32. (New) The network device according to Claim 7, wherein the destination port appears a plurality of times in the first routing table.

33. (New) The network device according to Claim 7, wherein the data packet is not transmitted on the first transmitting port when a failure is occurs in the first transmitting port.

34. (New) A device comprising:

 a first routing unit configured to save a first relationship between a data packet identifier and a destination port in a first routing table; and

 a second routing unit configured to save a second relationship between the destination port and a transmitting port in a second routing table.

35. (New) The device according to Claim 34, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port.